SECTOR

Please type a plus sign inside this box ➔ [+]
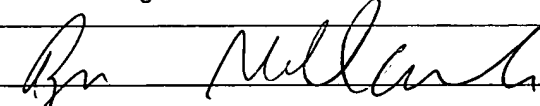
TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/838,320-1320
Filing Date	April 19, 2001
First Named Inventor	Peter B. Everdell
Group Art Unit	2152
Examiner Name	Not Yet Assigned

Total Number of Pages in This Submission		
	Attorney Docket Number	102689-0086

ENCLOSURES *(check all that apply)*

☐ Fee Transmittal Form	☐ Assignment Papers *(for an Application)*	☐ After Allowance Communication to Group
[x] Fee Attached	☐ Drawing(s)	☐ Appeal Communication to Board of Appeals and Interferences
☐ Amendment/Reply	☐ Licensing-related Papers	☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
☐ After Final	☐ Petition	☐ Proprietary Information
☐ Affidavits/declaration(s)	☐ Petition to Convert to a Provisional Application	☐ Status Letter
☐ Extension of Time Request	☐ Power of Attorney, Revocation Change of Correspondence Address	[x] Other Enclosure(s) *(please identify below)*
☐ Express Abandonment Request	☐ Terminal Disclaimer	1. Petition.
☐ Information Disclosure Statement	☐ Request for Refund	2. Copy of Notice of Omitted Item(s) in a Non-provisional Application.
☐ Certified Copy of Priority Document(s)	☐ CD, Number of CD(s) _____	3. Copies of the 3 pages of application and 3 formal drawings noted on Petition.
☐ Response to Missing Parts/ Incomplete Application		4. Return Postcard.
☐ Response to Missing Parts under 37 CFR 1.52 or 1.53	Remarks	

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual Name	NUTTER, MCCLENNEN & FISH, LLP Reza Mollaaghababa
Signature	
Date	September 14, 2001

Transmittal

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on the date shown below.

Dated: September 14, 2001   Signature: _____ (Reza Mollaaghababa)

1015824.1

Docket No.: 102689-0086
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re CIP Application of:
Peter B. Everdell, et al.

Application No.: 09/838,320-1320

Filed: April 19, 2001

For: NETWORK DEVICE INCLUDING
DEDICATED RESOURCES CONTROL
PLANE

Group Art Unit: 2152

Examiner: Not Yet Assigned

RECEIVED

OCT 0 4 2001

OFFICE OF PETITIONS
DEPUTY A/C PATENTS

Assistant Commissioner
for Patents
Washington, DC 20231

PETITION

In response to the Notice of Omitted items, mailed on July 16, 2001, in the above-referenced application, Applicants respectfully request that the enclosed FIGURES 34b, 59, and 60n, filed with submission of formal drawings on July 2, 2001, and enclosed herein, be included in the present application and be afforded the original filing date of the present application, namely, April 19, 2001, for the following reasons.

The present application claims priority, among other applications, to U.S. Application Serial No.: 09/703,856, which includes FIGURES 34b, 59 and 60n. Accordingly, these figures do not introduce any new matter in the present application.

Further, pages 195, 257 and 274 of the present patent application, enclosed herein for the Examiner's convenience, describe the contents of these figures with sufficient specificity to allow one of ordinary skill in the art to readily produce them.

For example, FIGURE 34b, and its respective description, include and refer to components of FIGURE 34a, which is included in the present application. Further, the description of FIGURE 60n, provided in the enclosed page 274, recites in detail the entries of the table presented in this figure, and further recites the exemplary numerical values for some of these entries which are identical to those provided in the table. For example, the description recites that the ATM node LID 999a can have a value of 5000 and the Managed device PID 999b can have a valued of 7.

In view of the above remarks, Applicants respectfully request that FIGURES 34b, 59 and 60n be included in the application, and further be granted the original filing date of the present application, namely, April 19, 2001. Applicants invite the Examiner to call the undersigned in case there are any remaining questions.

Dated: September 14, 2001   Respectfully submitted,

By _____
Reza Mollaaghababa
Registration No.: 43,810

NUTTER, MCCLENNEN & FISH, LLP
One International Place
Boston, Massachusetts 02110-2699
(617) 439-2000
(617) 310-9000 (Fax)
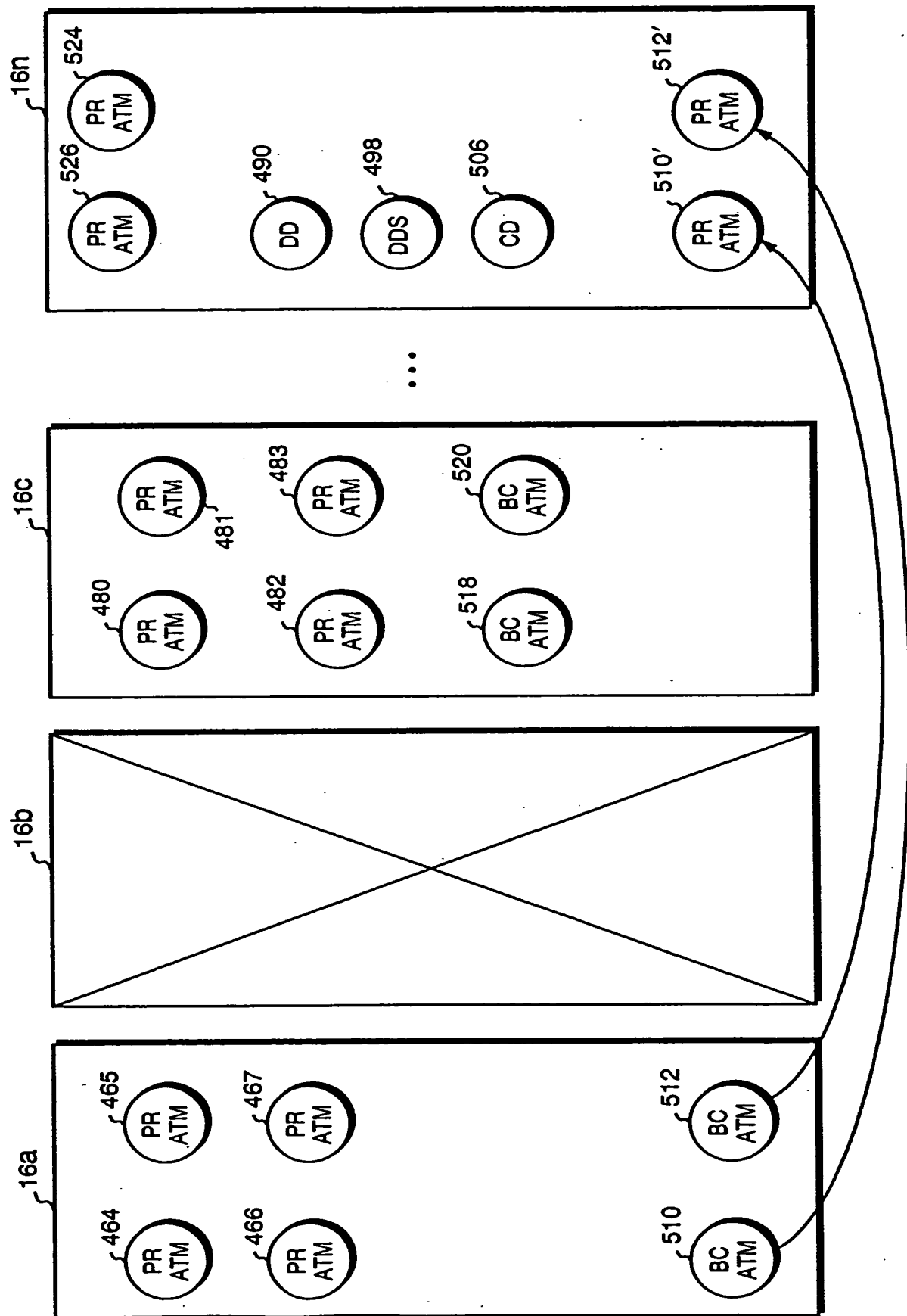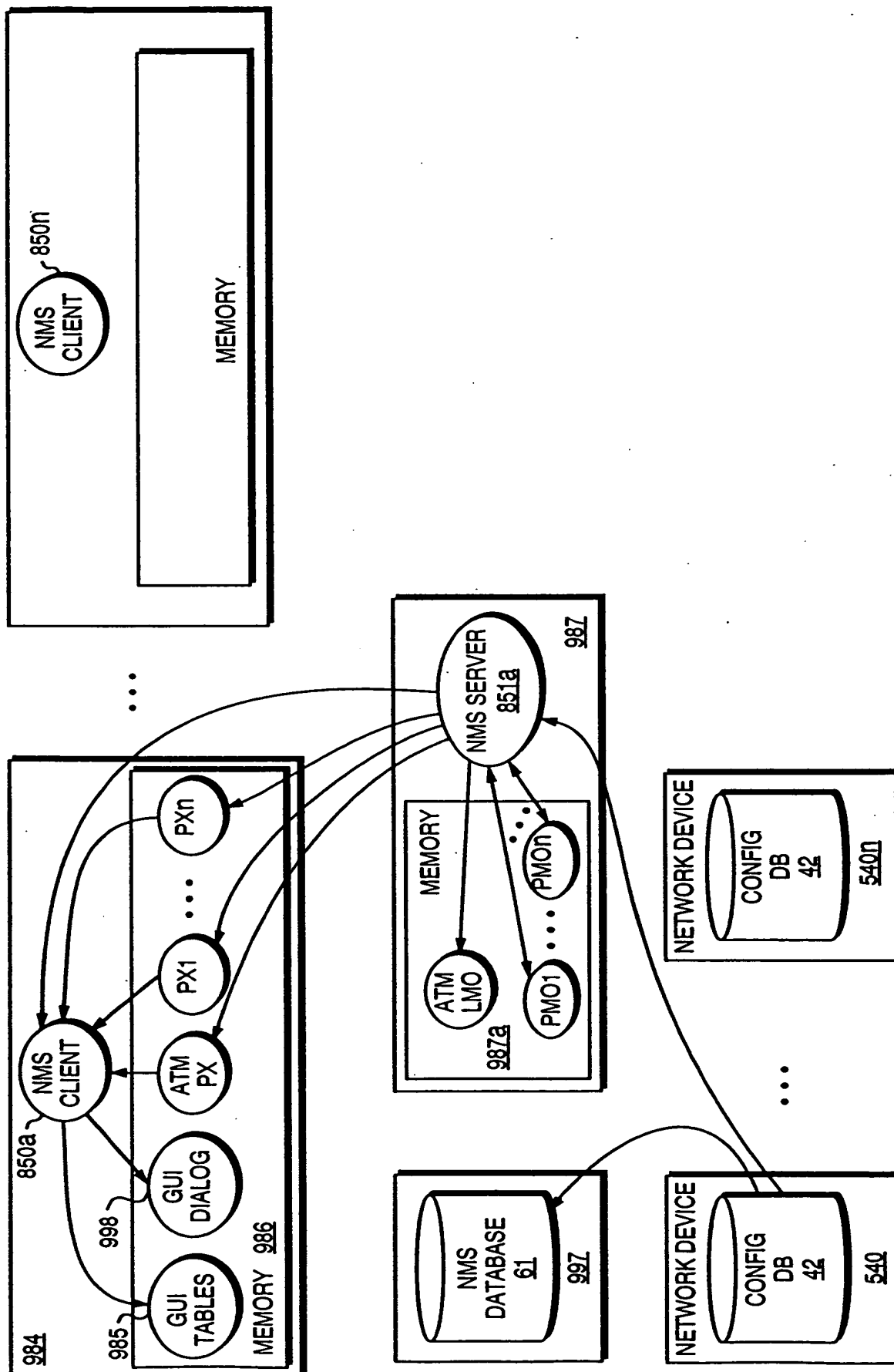Attorneys for Applicant

1029488.1

212/289

FIG. 34B

FIG. 59

VIRTUAL ATM IF TABLE 993

LID	A1	· · ·	An	ATM IF LID
7489				5054
· · ·	· · ·	· · ·	· · ·	· · ·

993a ... 993b

FIG 60J

VIRTUAL CONNECTION TABLE 994

LID	A1	· · ·	An	VIR. ATM IF LID
· · ·	· · ·	· · ·	· · ·	· · ·

994a ... 994b

FIG 60K

VIRTUAL LINK TABLE 995

LID	A1	· · ·	An	VIR. CONN. LID	CROSS. CONN. LID
· · ·	· · ·	· · ·	· · ·	· · ·	· · ·

995a ... 995b ... 995c

FIG 60L

CROSS-CONNECT TABLE 996

LID	A1	· · ·	An	VIR. LINK1 LID	VIR. LINK2 LID
· · ·	· · ·	· · ·	· · ·	· · ·	· · ·

996a ... 996b ... 996c

FIG 60M

ATM NODE TABLE 999

LID	A1	· · ·	An	MANAGED DEVICE PID
5000				1

999a ... 999b ... 999c

FIG 60N

line card reduces the primary line card resources required for backup. Since backup line card 16n is not executing primary processes, more resources are available for backup. Hence, backup line card 16n executes six backup processes corresponding to six primary processes executing on primary line cards. In addition, backup line card 16n is partially operational and is executing device driver processes 490 and storing device driver backup state 498, 500 and 502 corresponding to the device drivers on each of the primary elements and network connection data 504, 506 and 508 corresponding to the network connections established by each of the primary line cards.

Alternatively, each primary line card could execute more or less than two backup processes. Similarly, each primary line card could execute no backup processes and backup line card 16n could execute all backup processes. Many alternatives are possible and backup processes need not be spread evenly across all primary line cards or all primary line cards and the backup line card.

Referring to Fig. 34b, if primary line card 16b experiences a failure, device drivers 490 on backup line card 16n begins using the device driver state, for example, DDS 498, corresponding to the device drivers on primary line card 16b and the network connection data, for example, CD 506, corresponding to the connections established by primary line card 16b to continue transferring network data. Simultaneously, backup line card 16n starts substitute primary processes 510' and 512' corresponding to the primary processes 474 and 475 on failed primary line card 16b. Substitute primary processes 510' and 512' retrieve active state from backup processes 510 and 512 executing on primary line card 16a. In addition, the slave SRM on backup line card 16n informs backup processes 526 and 524 corresponding to primary processes 472 and 473 on failed primary line card 16b that they are now primary processes. The new primary applications then synchronize with the rest of the system such that new network connections may be established and old network connections torn down. That is, backup line card 16n begins operating as if it were primary line card 16b.

Multiple Backup Elements:

195

also stored in memory local to the NMS client (for example, in proxies or GUI tables) and used by the NMS server to quickly retrieve data requested by the NMS client. Each NMS client, therefore, maintains its user context of interest, eliminating the need for client-specific device context management by the NMS server.

Referring to Fig. 59, an NMS client 850a runs on a personal computer or workstation 984 and uses data in graphical user interface (GUI) tables 985 stored in local memory 986 to display a GUI to a user (e.g., network administrator, provisioner, customer) after the user has logged in. In one embodiment, the GUI is GUI 895 described above with reference to Figs. 4a-4z, 5a-5z, 6a-6p, 7a-7y, 8a-8e, 9a-9n, 10a-10i and 11a-11g. When GUI 895 is initially displayed (see Fig. 4a), only navigation tree 898 is displayed and under Device branch 898a a list 898b of IP addresses and/or domain name server (DNS) names may be displayed corresponding to network devices that may be managed by the user in accordance with the user's profile.

If the user selects one of the IP addresses (e.g., 192.168.9.202, Fig. 4f) in list 898b, then the client checks local memory 986 (Fig. 59) for proxies (described below) corresponding to the selected network device and if such proxies are not in local memory 986, the NMS client sends a network device access request including the IP address of the selected network device to an NMS server, for example, NMS server 851a. The NMS server may be executed on the same computer or workstation as the client or, more likely, on a separate computer 987. The NMS server checks local memory 987a for managed objects corresponding to the network device to be accessed and if the managed objects are not in local memory 987a, the NMS server sends database access commands to the configuration database 42 within the network device corresponding to the IP address sent by the NMS client. The database access commands retrieve only data corresponding to physical components of the network device.

In one embodiment, data is stored within configuration database 42 as a series of containers. Since the configuration database is a relational database, data is stored in tables and containment is accomplished using pointers from lower level tables (children)

257

object and sends it to the NMS client which updates the GUI tables to display the added virtual ATM interface (e.g., 947c, Fig. 5u) to Virtual ATM Interfaces tab 947. The configuration object may be temporarily stored in local memory 986. However, once the GUI tables are updated, the NMS client deletes the configured object from local memory 986.

Because there may be many upper layer network protocol interfaces in network device 540, the port managed object and port proxy may become very large as more and more function calls (e.g., Add Virtual ATM Interface, Add Virtual MPLS Interface, etc.) are added for each type of interface. To limit the size of the port managed object and port proxy, all interface function calls may be added to logical proxies corresponding to logical upper layer protocol nodes. For example, an ATM node table 999 (Fig. 60n) may be included in configuration database 42, and when ATM service is first configured by a user on network device 540, the NMS server assigns an ATM node LID 999a (e.g., 5000) and inserts the ATM node LID and the managed device PID 999b (e.g., 1) in one row 999c in the ATM node table. The NMS server may also insert any attributes (A1-An). The NMS server then retrieves the data in the row and creates an ATM logical managed object (ATM LMO). Like the physical managed objects, the ATM logical managed object includes the assigned LID (e.g., 5000), attribute data and function calls. The function calls include Get Proxy and interface related function calls like Add Virtual ATM Interface. The NMS server stores the ATM LMO in local memory 987a and issues a Get Proxy function call. After creating the ATM proxy (ATM PX), the NMS server sends the ATM proxy to memory 986 local to NMS client 850a. The NMS client uses the ATM proxy to update GUI tables 985, and then uses it to later make function calls to get ATM interface related data from configuration database 42.

Thus, after the user selects OK button 950e (Fig. 5t) in virtual ATM interfaces dialog box 950, the NMS client places an "Add Virtual ATM Interface" function call to the ATM node proxy. The function call includes the ATM interface LID (stored in the GUI table), the corresponding ATM node LID and the parameters provided by the user through the ATM interfaces dialog box. The function call causes the NMS client to send JAVA RMI
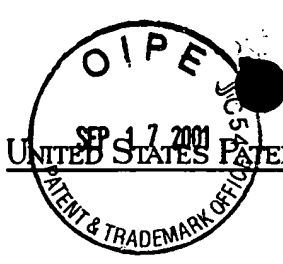
274

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/838,320	04/19/2001	Peter B. Everdell	102689-86

CONFIRMATION NO. 1320

021125
NUTTER MCCLENNEN & FISH LLP
ONE INTERNATIONAL PLACE
BOSTON, MA 02110

FORMALITIES LETTER

OC000000006301024

Date Mailed: 07/16/2001

NOTICE OF OMITTED ITEM(S) IN A NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

A filing date has been accorded to the above-identified nonprovisional application papers; however, the following item(s) appear to have been omitted from the application:

- Figure(s) **34b, 59 & 60n** described in the specification.

I. Should applicant contend that the above-noted omitted item(s) was in fact deposited in the U.S. Patent and Trademark Office (USPTO) with the nonprovisional application papers, a copy of this Notice and a petition (and $130.00 petition fee *(37 CFR 1.17(h))*) with evidence of such deposit **must** be filed within **TWO MONTHS** of the date of this Notice. The petition fee will be refunded if is determined that the item(s) was received by the USPTO.

II. Should applicant desire to supply the omitted item(s) and accept the date that such omitted item(s) was filed in the USPTO as the filing date of the above-identified application, a copy of this Notice, the omitted item(s) (with a supplemental oath or declaration in compliance with 37 CFR 1.63 and 1.64 referring to such items), and a petition under 37 CFR 1.182 (with the $130.00 petition fee *(37 CFR 1.17(h))* requesting the later filing date **must** be filed within **TWO MONTHS** of the date of this Notice.

III. The failure to file a petition (and petition fee) under the above options (I) or (II) within **TWO MONTHS** of the date of this Notice (37 CFR 1.181(f)) will be treated as a constructive acceptance by the applicant of the application as deposited in the USPTO. **THIS TWO MONTH PERIOD IS NOT EXTENDABLE UNDER 37 CFR 1.136(a) or (b)**. In the absence of a timely filed petition in reply to this Notice, the application will maintain a filing date as of the date of deposit of the application papers in the USPTO, and original application papers (*i.e.*, the original disclosure of the invention) will include only those application papers present in the USPTO on the date of deposit.

In the event that applicant elects not to take action pursuant to options (I) or (II) above (thereby constructively electing option (III)), amendment of the specification to renumber the pages consecutively and cancel incomplete sentences caused by any omitted page(s), and/or amendment of the specification to cancel all references to any omitted drawing(s), relabel the drawing figures to be numbered consecutively (if necessary), and correct the references in the specification to the drawing figures to correspond with any relabelled drawing figures, is required. Any drawing changes should be accompanied by a copy of the drawing figures showing the proposed changes in red ink. Such amendment and/or correction to the drawing figures, if necessary, should be by way of preliminary amendment submitted prior to the first Office action to avoid delays in the prosecution of the application.

A copy of this notice __MUST__ be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE